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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/383,508 08/26/99 RYAN

P AMDA.389DIV1

PM11/1120  
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MENDOTA HEIGHTS MN 55120

EXAMINER

RODRIGUEZ, J

ART UNIT

PAPER NUMBER

3653

DATE MAILED: 11/20/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**



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RYAN

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PM82/1026

EXAMINER
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Remanded  
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**Commissioner of Patents and Trademarks**

<b>Office Action Summary</b>	<b>Application No.</b> 09/383,508	<b>Applicant(s)</b> RYAN ET AL.	
	<b>Examiner</b> Joseph C Rodriguez	<b>Art Unit</b> 3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- |  |  |
|--|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                     | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 16) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____    | 20) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because the Specification (page 3, line 15) refers to "Fig. 3A-3C"; however, Figure 3C is not present. Correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, the specification fails to teach in "full, clear, concise, and exact terms" how the sorter handles common issues of semiconductor fabrication, such as protecting the reticles from foreign particles, orienting the reticles, and stabilizing the reticles during the sorting process. The failure to address these issues is especially significant in the instant invention, which alleges the ability to perform multiple handling functions, nearly simultaneously, on several reticle cassette libraries. Thus, without a more detailed specification that clearly teaches the claimed invention, the claimed reticle sorter is merely an obvious design choice that is not patentable. Moreover, the specification appears especially broad and lacking in

description when compared to the teachings of similar inventions in the field, such as Sussman et al. (hereinafter "Sussman"), Iizuka, Rosenquist, and Umatate et al. (hereinafter "Umatate"). Consequently, the specification must be corrected.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph because the phrase "capable of" is vague and indefinite since it only points out what the invention is "capable of" accomplishing, rather than what it actually does, thereby rendering the claim indefinite and the scope of the claim unascertainable. See MPEP 2173.05(d).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 5, 7, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iizuka in view of Sussman.

6. lizuka teaches a reticle conveying device placed between a reticle storage system and a photolithography exposure tool that has a single location capable of interfacing with one reticle library (i.e., a cassette having slots for several reticles). (column 3, lines 26-42; figure 6) lizuka also teaches the use of a holding location for a reticle, wherein the device may place a reticle during an operation. (figure 3; column 5, lines 55-66) lizuka further teaches an inspection system, which includes a tool for measuring an amount of dust on the reticle (column 4, lines 55,57; figure 3). lizuka thus teaches all that is claimed except for a device that interfaces with multiple reticle libraries, that uses a holding location during the sorting operation, and that retrieves and inserts the reticles to and from the cassette slots when sorting.

7. Sussman, however, teaches that a substrate processing system such as lizuka's may have more than one location capable of holding and interfacing with a reticle library. (figures 1, 2A, 2B, and 3B; column 3, lines 15-19) Sussman also teaches a reticle processing system that can retrieve and insert a reticle from a cassette slot. (column 5, lines 43-52; column 10, lines 29-34) Moreover, Sussman implicitly teaches that the retrieval and insertion functions can be used to sort reticles within a cassette, and from cassette to cassette, through the use of position sensors. (column 9, lines 14-18; column 10, lines 48-62; figure 3B) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify lizuka's device to interface with multiple cassettes, including the means for moving each cassette from the input port to one or more of the holding locations, and to further modify lizuka's device to be

capable of retrieving and inserting reticles from, and to, the slots of different cassettes when sorting. It would also have been obvious to one skilled in the art to modify Iizuka's invention to utilize the holding location during a sorting operation. These modifications would allow the exposure tools access to a greater number of reticles and reduce the time and energy required by an operator to interchange the reticle cassettes.

8. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iizuka and Sussman as applied to claims 1, 3, 5, 7, and 9-12 above, and further in view of Umatate.

9. Iizuka and Sussman teach all that is claimed except for a controller with a host system for controlling the sorting of the reticles and a reticle sorter with an inspection system that includes a tool for detecting flaws in a reticle pattern. Umatate, however, explicitly teaches the use of a lithography information system controlled by a host computer, which controls, inter alia, the changing and aligning of reticles. (column 13, lines 6-40) Umatate also teaches the use of various measuring devices to inspect whether a pattern has been correctly applied to a wafer. (figure 2; column 4, lines 23-34; column 10, lines 54-69; column 11, lines 1-3) Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Iizuka and Sussman's devices with an inspection system that can detect flaws in a reticle pattern, as taught by Umatate, to reduce the amount of errors during wafer fabrication. It would also have been obvious to one of ordinary skill in the art at the time the

invention was made to modify Iizuka and Sussman's devices with an information system controlled by a host computer, thus allowing an operator to collect data on the system's performance and to more easily maintain optimum system performance.

10. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iizuka and Sussman as applied to claims 1, 3, 5, 7, and 9-12 above, and further in view of Rosenquist.

11. Iizuka and Sussman teach all that is claimed except for a sorting system that utilizes an arm with claws and an inspection system that utilizes a video camera and display device. Rosenquist, however, teaches that a reticle cassette can be sorted using positional mapping sensors, as in Sussman, and a robot arm with a precision gripping mechanism. (column 2, lines 1-7 and 29-37; column 3, lines 57-67; column 4, lines 54-60; column 8, lines 57-65) Rosenquist also teaches that a video camera can be used to monitor the reticle. (column 10, 5-8) Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Iizuka and Sussman's devices with a sorting system that utilizes an arm with claws and an inspection system that employs a video camera. These modifications provide greater precision during the inspection process and provide the reticles with greater stability during the sorting process.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph C Rodriguez whose telephone number is 703-308-8342. The examiner can normally be reached on M-F during business hours, with alternate Mondays off.

The fax phone number for the organization where this application or proceeding is assigned is 703-306-4194.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

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October 24, 2000

  
DONALD P. WALSH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600